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Journal of the Society of Arts.

FRIDAY, JANUARY 29, 1858.

NOTICE TO MEMBERS.

Owing to a mistake on the part of the printer, in enclosing a map in a portion of the stamped edition of last week's *Journal*, a charge of 8d. was made by the General Post Office; in consequence of which the Journals have, in many instances, been refused by the individuals to whom they were addressed. Steps have been taken, at the cost of the printer, to supply the *Journal* in each of those cases, so that there may be no break in the volume. Members who have not received their Journals should apply to the Secretary of the Society of Arts, Adelphi, London, W.C.

TENTH ANNUAL EXHIBITION OF INVENTIONS.

Monday, the 5th of April, is fixed for the opening of the Society's Tenth Annual Exhibition of Inventions.

Persons intending to contribute to the Exhibition should communicate with the Secretary of the Society of Arts as soon as possible, stating—

1. The title of the Invention.
2. Whether the article will be a Specimen, Model, or Drawing.

Articles for exhibition must be forwarded to the Society's House, Adelphi, London, W.C., *carriage paid*.

The days for receiving articles are, Thursday the 18th; Friday, the 19th; and Saturday, the 20th of March; and no articles can be received after the last of these days.

All articles should be accompanied with a brief but clear description of the invention, with a wood-block (when possible) for illustrating the Catalogue, and a reference to any publication in which the Invention is described.

All drawings must be framed.

SPECIAL PRIZE.

A Prize of Twenty Pounds and the Society's Silver Medal, is offered for a Writing-case suited for the use of Soldiers, Sailors, Emigrants, &c. The attention of those intending to compete for this prize is directed to the following points, which will influence the Council in making their award :—

Lightness,
Smallness of size,
The avoidance (if possible) of fluid ink,
Durability,
Cheapness, with a guaranteed supply, and
General applicability to the duties, habits, and requirements of the above classes.

The articles sent in for competition must be delivered at the Society's House, Adelphi, London, W.C., on or before the 8th May next.

EXAMINATIONS—LOCAL BOARDS.

A Meeting of the Secretaries of London Institutions in Union with the Society, was held on Thursday, the 21st inst., at the Society's House, convened in accordance with the resolution passed at the Conference held on the 11th inst. A Deputation from the Council attended the meeting, when it was resolved unanimously—

> "That the Secretaries present having heard the explanations given by the Council in reference to the formation of Local Boards, undertake to report the same to their respective committees, and will, as early as possible, communicate to the Society of Arts whether they will appoint local Boards themselves or join others in the neighbourhood in doing so."

THE SMOKE NUISANCE.

Members of the Society will be glad to learn that the award made by the Council in 1856, of the Society's Gold Medal to Mr. Charles Wye Williams, for his "Essay on the Prevention of the Smoke Nuisance," has been confirmed by the Newcastle Coal and Colliers' Association, who have awarded to that gentleman the premium of £500 for an Essay on the same subject. The details of the award will be given in a future number.

There were one hundred and three competitors.

SIR JOHN SOANE'S MUSEUM.

The Trustees have given notice that the Museum, 13, Lincoln's-inn-fields, will be open this season as usual, on the Tuesday in each week, from the 2nd of February to the 31st of August, and likewise on Thursdays and Fridays in April, May, and June.

Cards of admission to view the same are to be obtained on written application to the Curator, at the Museum, or to either of the Trustees.

EXAMINATIONS.—FORMATION OF A LOCAL BOARD OF EXAMINERS AT BRIGHTON.

On Friday, the 22nd instant, a meeting for the consideration of this subject was held at the Town Hall. The desirability of forming such a Board at Brighton having occurred to some of the friends of education, a preliminary meeting was held in December last, which resulted in the formation of a Committee, at whose request a deputation from the Society of Arts attended at the Town Hall, to explain the nature of the movement. The deputation consisted of Mr. Wentworth Dilke (Chairman of the Council of the Society of Arts), Sir Thomas Phillips, Mr. Harry Chester, and Mr. William Hawes. There were present, in addition, the Mayor (J. C. Burrows, Esq.), Dr. King, Dr. Allen, Rev. S. R. Drummond, Rev. J. Allen, Messrs. Peto, Rickards, Penley, Scott, J. Ellis, Sleight, Harris, C. Turrell, Brigden (who represented the Athenæum), Howell (representing the Mechanics' Institution), Andrews, Wonfor, and Barclay Phillips (who acted as Hon. Sec.). Messrs. Button and Wells also attended by invitation from Lewes. Similar invitations had been issued to the Institutions at Chichester, Shoreham, Worthing, and Hastings. The two former had replied that they were not yet in a position to move in the matter, and the two latter had not replied at all.

After some preliminary proceedings,

Mr. CHESTER explained the nature of the Society's scheme. The education given to the children of the poorer classes and those immediately above that rank, was, he observed, necessarily defective, inasmuch as they were removed from school about the time that a rich man's children were beginning to be sent there. It seemed most desirable, therefore, that some steps should be taken to complement this school-education, and this the Society of Arts had undertaken to do through the medium of Mechanics' Institutions and similar bodies. Hitherto those Institutions had not worked satisfactorily in an educational point of view. It had been found impossible to induce persons employed during the day to attend the evening classes in any large numbers, perhaps because so little inducement beyond that of mere self-culture could be held out to them to do so. The Society of Arts had now stepped forward, with the view of offering the necessary inducement, by organising public examinations of such of the students of those classes as chose to compete, and awarding to them not only certificates of approval, but also prizes, and to a certain extent, nominations to employment in the Civil Service. This system had been for some years in operation by the Society, but only to a limited extent. Thus, in 1856, only one examination took place, and that in London; in 1857, two centres of examination were arranged, London and Huddersfield, and though the examinations were satisfactory, the result was very limited, as in the last year only thirty-seven Institutions were represented. This induced the Society to return to their original design, and to have the examinations conducted throughout the country wherever co-operation could be obtained. The plan had already been carried out to a great extent in the north, and in Hampshire and Wiltshire, and there appeared no reason why Sussex should not co-operate with the Society, Brighton being the head-quarters of the union. Hence this meeting. It would be necessary to say a few words in explanation of the system of examination, which was the same throughout the country. It was obviously impossible that the Society of Arts could conduct the examinations in so many distant parts orally; therefore, it had recourse to paper-work, as at the Universities. They, however, contemplated a preliminary oral examination, the whole process being as follows. Any institution wishing to have its candidates examined will communicate to the Local Board, which may comprise any number, from one upwards. Thereupon the candidates will be submitted to an elementary examination, to ascertain whether they have a knowledge of reading, writing, arithmetic, geography, and so forth, so that the Society may not be flooded with people absolutely ignorant of everything. Questions will then be put on the special subject for which the candidate goes in, so that it may be ascertained, not how much he knows, but whether he knows anything about it. The Local Board, having gone so far, will send up to the Society a list of the "sifted" candidates and their subjects, which must go in five weeks before Whitsuntide, as Whit Monday and Tuesday are selected for the examinations in London, as most convenient for the working-men. The list will be given to the Board of Examiners, who will send down printed papers showing what the candidates are required to do, and this will be done in a room at one time, under the supervision of one or more of the Local Board. The papers returned to London will go before the Examiners, who will announce the result to the Council of the Society, and they will award certificates and prizes at meetings to be held for the purpose in various provincial towns, the Society contributing toward the expenses of those who choose to proceed to those towns to receive the awards. It was at first proposed to confer on the most successful candidates the title of Associate of the Society of Arts, but it was thought that it was not the proper course for such a Society to take on itself to confer degrees like the Universities, and happily just at this time Oxford and Cambridge had come to the determination of admitting qualified persons to share certain distinctions which would indeed be an honour to those who acquired them. Mr. Chester further explained how evening classes and other means of education could be brought into co-operation with the Society, and concluded by observing that what he proposed was easy to be done, and as it was so easy he hoped it would be done, so that the poorer classes of this neighbourhood might not be without an advantage which might thus be brought within their reach.

Dr. KING was desirous of knowing something about the Society of Arts itself; and

Mr. DILKE went into some details concerning the Society, which, professing to deal with Arts, Manufactures, and Commerce, embraces subjects almost endlessly diversified.

Mr. B. PHILLIPS wished to know in what manner Local Boards had been formed elsewhere, and in what way they had paid their expenses?

Mr. DILKE said, at Sheffield the Mayor called a meeting of the Committees of the four Institutions there, and they appointed a Committee of two or three from each Society, who will select the Examiners,—gentlemen of the neighbourhood, who will act gratuitously. He did not see how the expenses of the Local Board could exceed a few shillings, but as yet they had no experience in this matter.

The Rev. J. ALLEN wished to know how they were to determine the class and condition of persons intending to become candidates?

Mr. CHESTER read rule 17, restricting candidates.

> "No person who shall not have been, for three months previously, a member of, or Student of a Class in, an Institution in Union with the Society; no person under sixteen years of age; no graduate or undergraduate of any University of the United Kingdom; no student of any of the learned professions; no certificated schoolmaster or pupil-teacher."

Mr. HAWES explained that the condition of three months' membership only applied to examinations before the Society; the Local Boards need not insist on that; indeed, the desire was to extend the benefits of the system as widely as possible. The Society had been open to a charge of trying to get up a Board of Education, which might in due time be transferred to Government; it had been said that this was a species of centralisation. So far from this, their desire was to establish the system of distinct preliminary examinations, and then, as soon as possible, that the counties should combine and have their own higher examinations also, for it would be difficult for the Society, as its operations enlarged, to undertake the work of the whole kingdom.

Sir THOS. PHILLIPS spoke on the benefits which working men were likely to derive from the encouragement to self-education which the Society was enabled to hold out to them.

The Rev. J. ALLEN was sure he represented the feelings of the meeting when he said they were quite satisfied with the explanations they had heard, and fully acknowledged the kind and benevolent views which had actuated the gentlemen who had so kindly responded to their wishes in coming to Brighton this day. It was necessary to take a practical course, and therefore he would simply propose, "That a Local Board of Examiners, in connection with the Society of Arts, be formed in Brighton."

Mr. SLEIGHT seconded.

Mr. ANDREWS, Dr. KING, and Mr. J. ELLIS supported.

Some conversation ensued, in the course of which Mr. Chester stated that several appointments in the Civil Service had been already placed at the disposal of the Society for 1858, and they might have others. In the department to which he belonged, under the authority of Lord Granville, eight or ten clerks had received their appointments in this way; there were none more conspicuous for intelligence, industry, and modesty, or who, in every respect, made better public servants. The resolution was carried.

Subsequently the meeting adopted a second resolution, adding Messrs. Savage, Bessant, Brigden, Howell, and Sleight, to a Sub-Committee already formed, with a request that they would draw up a scheme for the formation of a Local Board, and submit it to a future meeting of the existing Committee, to which were also to be summoned the members of the Committees of the Royal Literary and Scientific, the Athenæum, the Mechanics', and the Railway Institutions, so that the Board might finally be established with the sanction of all the Local Societies.

The proceedings closed with votes of thanks to the Deputation and the Chairman.

EIGHTH ORDINARY MEETING.

WEDNESDAY, JAN. 27, 1858.

The Eighth Ordinary Meeting of the One Hundred and Fourth Session, was held on Wednesday, the 27th inst., Peter Graham, Esq., in the chair.

The following Candidates were balloted for and duly elected members of the Society :—

Burt, Frederick Valentine
Clay, William
Hodgson, Rev. William
Johnston, James
Manning, Frederick A.
Morgan, Thos. Vaughan
Morgan, Wm. Vaughan
Piesse, G. W. Septimus
Scott, Wentworth Lascelles
Underwood, John
Watson, J. Forbes, A.M., M.D.
Waugh, John Neill, M.D.
Young, W. Hill.

The following Institution has been taken into Union since the last announcement :—

453. Richmond (Surrey) Young Men's Institute.

The Paper read was :—

ON THE USE OF THE SOULAGES COLLECTION OF ITALIAN ART IN MODERN ART MANUFACTURE.

BY J. G. CRACE.

I think that the subject I bring before your notice can be discussed in no place more appropriately than in this; and that it is also one peculiarly suitable for our consideration. In no possible manner can we more usefully advance the interests of art manufacture than by seeking to acquire collections of works that have impressed upon them the genius and the skill of men who lived at a time when Art abounded.

You may teach the rules of Art, which serve like grammar to a language, but, without examples, it will be difficult (perhaps with few exceptions, impossible) for students to arrive at anything like perfection in the arts of design by rule alone: "Longum iter per precepta, breve et efficax per exempla" is indeed a true saying, inscribed by Lord Bacon in his house at Gorhambury.

I will preface what I am about to say respecting the "Soulages Collection" by a reference to Art Manufacture, as it existed about the time that these examples were produced; for they are mostly of a period ranging from 1500 to 1600.

At this date society had just emerged from that chivalric barbarity which prevailed during the Mediæval period, which recognised the pre-eminence of brute force or military skill, rather than the refinements of literature or the arts. Commerce, too, that greatest of civilizers, now vastly extended its ramifications, and bringing wealth and more genial desires for comfort or luxury, caused a general appreciation of Art, and a greater desire for obtaining its productions. Then began to burst forth in Italy that revival of a love for Art which had almost slumbered on the dry rules of tradition for so long a period; and then successively arose those great artist minds that brought such glory upon their country and their time.

Nor was it the higher branches of art, Painting, Sculpture, Architecture, that alone were exalted; but the more ordinary objects of daily use were equally affected by this growth of art. Metal work, pottery, glass, furniture, woven fabrics, all became the medium for exercising the taste that abounded, and which was demanded by that love for art which had so strongly inoculated the minds of the people.

And what a strong spirit, what a knowledge of and love for art had this revival, this "renaissance" of art, produced! At no other time do we find such fancy, originality, and beauty, so abundantly exhibited in common things, as in the art manufactures of this period. Take up what specimen we may, we find something to admire and something to learn from. It is a period, of all others, valuable for instructing us in those fanciful combinations of ornamental art, a knowledge of which is so essential in art manufacture.

Most valuable to us, therefore, must be a collection of objects precisely of this kind, a collection affording characteristic examples of each branch of manufacture. Such is the Soulages Collection, of which I now propose to speak in detail.

You are aware that it consists of specimens of pottery, such as Majolica ware, enamelled ware, and stone ware; of enamels, of glass, of metal work, of sculpture, of painted glass, of pictures, of tapestry and woven stuffs, and of furniture; numbering nearly 800 pieces.

This collection was formed by M. Soulages, about twenty years ago, specially with the view of illustrating the arts of the sixteenth century, and more particularly those of Italy. He travelled to that country, and selected the specimens with great taste and judgment, under circumstances far more favourable than are likely again to present themselves; for the actual value of this class of art works is enormously increasing. It was known to many in England that this curious collection existed; and when an opportunity of acquiring it offered, it was justly considered that it ought to be purchased for this nation. Then, however, the energies of our Government were directed upon the Russian war, and Ministers could not bestow thought or money on this subject. Several lovers of art, however, met together, and guaranteed a sum of money which enabled them to purchase the collection, in the hope that in more quiet times it might be acquired by our Government for the public benefit.

The most important part of this collection is undoubtedly that comprising the specimens of Majolica ware, whether on account of their number (167 pieces), or their mercantile value. Of no intrinsic value for the material itself, which is generally of a coarse description, they are priceless for the art displayed upon them, and most curious as examples of the various processes employed.

Most beautiful are the delicate arabesques which are interwoven on their surfaces, drawn with such fancy and taste, and arranged so skilfully.

Look at them as the works of men who, of great talent in high art and overflowing with the love of it, thought not that they descended when they exercised their genius in adorning such lowly things.

Of the highest interest to the manufacturers of earthenware and porcelain, their value is by no means limited in that direction. In every branch of manufacture where the art of design is required, they are a mine of art-wealth, full of suggestions for ornamental design, or arrangement of beautiful colour; while their contemplation must ever exercise a beneficial influence in improving taste, and causing a keener appreciation of its value.

Decorative pottery was introduced into Spain by the Moors, and by them the manufacture was carried on to a considerable extent, and large quantities were imported into Italy during the middle ages. Early in the 15th century the manufacture of this peculiar ware was introduced into Italy, probably by some of the Hispano-Moors who were driven from Spain.

It is well known that at the Alhambra there is a vase of large size and of rich and beautiful Moorish design in gold and colours; and throughout that palace the Moorish tiles still remain on the dados and other parts. At Seville, in the Moorish palace called the "Alcazar," there are to be found the "Azulejos" or enamelled tiles, and there is also in this city one palace, called the "Casa de Pilatos," belonging to the Duke of Medina Celi, in which the walls of all the state apartments are covered from top to bottom with tiles of the most elegant patterns of about 16th century work. I made drawings of several of these; and, feeling sure I could not do better, gave them to Mr. Minton, who has had one of them made, which I now show you.

The Moors excelled in this kind of pottery, and were especially celebrated for giving to it that iridescence or coloured lustre, which is one of the peculiar qualities of the Majolica ware.

There has been considerable diversity of opinion as to the origin of the term "Majolica," and it has been most generally stated that it derives that name from the island Majorca. It occurs to me, however, that it is certainly derived from the Arabic word "Majar," brightness or splendour; and "lejo," which I presume to correspond with our word "ware," as in the Spanish name for tiles "Azulejos," equally of Arabic origin, from "Azu" blue, and "lejos." I advance this derivation; others better qualified than myself will test its correctness.

During the 15th century the Majolica ware became a great staple manufacture of Italy, and brought renown upon the towns where it was manufactured—Faenza, Urbino, Castel Durante, Gubbio, and Pesaro. The master whose name is attached to the most important pieces is Maestro Giorgio Andreoli, better known as simply "Maestro Giorgio," of Gubbio. He had a son Vicentio, called Maestro Cencio, who followed his father's profession. It is more especially these masters who excelled in the iridescent or "lustre" colours, for which this ware is so celebrated. Orazio Fontana and Francesco Xanto, both of Urbino, also produced works rivalling in beauty those of Giorgio.

Among the specimens to be particularly noticed, the vase No. 95 of Hispano-Moorish design, is curious both from its rarity and the peculiarity of its form and pattern, which the photograph will explain. Its height is 20¾ inches, and the pattern on it is formed of leaves and stems in yellow lustre and blue enamel on white.

The large plateau No. 2, of which there is also a photograph, is to be remarked for the brilliancy of its glaze, and the richness of the arabesque ornaments which form its borders.

No. 4 is a plateau remarkable for the beauty of its lustre, of a delicate pale rose colour.

No. 9 is a magnificent example of richness, of colouring, and beautiful execution. The medallion head is on a deep blue back ground, and is supposed to be a portrait of Perugino.

The plateau No. 11 is an example of painting of a high class devoted to this ware. The whole surface is covered with the subject of the "Gathering of the Manna," from an engraving after Raffaelle. Not only were paintings copied, but artists of reputation designed expressly for it, as this drawing, lent by Mr. Robinson, will show. This is a design made for a plateau by Battista Franco.

No. 22 is a large plate of Gubbio lustre ware, by Maestro Georgio, dated 1522. The photograph will convey some idea of the richness and beauty of the ornament. It is painted on a blue ground, and richly relieved with the ruby and yellow lustres, exhibiting a perfect blaze of the most brilliant "reflet."

No. 88 is a small oviform ewer of Urbino ware, attributed to Orazio Fontana; an exquisite piece, possessing all that is beautiful in the various peculiarities of this ware, and equal to any production from Sèvres or Dresden.

Nos. 92 and 93 are a pair of oval flasks of Urbino or Castel Durante ware. The photograph will show the elegant form and ornamentation of these specimens. The arabesques are in colours on a white ground.

No. 131, a candlestick, Gubbio lustre, is a very beautiful example, adapted, as regards its ornament, from the bronze damascened candlesticks of Oriental workmanship, so frequent in Italy at that period.

It would fatigue you were I to attempt to describe all that is beautiful in this collection; and besides, it would be useless, for the interesting catalogue raisonné by Mr. J. C. Robinson, gives a perfect account of everything.

Next we have 23 pieces of Palissy ware, or ancient Faience of the south of France. This varies from the objects last under our consideration, being ornamented in relief, and painted in enamel colours of great brilliancy. Bernard Palissy was the originator of this kind of art. He enthusiastically worked out his inventions under extraordinary difficulties, till he arrived at results enabling him to produce the beautiful works which established his fame.

These are divided into three classes. 1st, the rustic pieces, being mostly dishes, decorated with foliage, reptiles, &c.; 2nd, those with relief of figures; 3rd, pieces with ornament only.

The Soulages Collection contains specimens of each of these styles.

The large oval dish, No. 134, is a beautiful specimen of the first kind. All those reptiles, and fish and plants (which are given rather confusedly in the photograph, on account of the colours), are in the original carried out with the most perfect imitation of nature. Still, I consider this a kind of work curious for the invention of its enamel and other technical qualities, rather than for general usefulness as applied to art. Far different is the next piece that I shall notice, No. 144; an oval ewer, which is of infinite elegance of form and decoration; it is a model worthy of the notice either of the goldsmith or modeller of pottery. Its extreme height is 11 inches, and the length 8½ inches. The photograph will show the excellence of its outlines. The medallion in the centre contains a water-nymph; the ornament, of various colours, is on a rich blue ground.

The collection contains also some specimens of Flemish stoneware, and lastly, but not least, two specimens of Della Robbia ware, both of great beauty, as will be evident on looking at the photographs. One is the Virgin and Child, a circular relievo, 21 inches in diameter. The back ground is blue, the figures white enamel. The expression of the faces is most holy and beautiful. The other specimen, "The Adoration of the Wise Men," 24 inches long by 16½ high, is also an exquisite production.

The inventor of this ware was Luca Della Robbia, born about 1400; he was assisted by his nephew, and the art was carried on by their descendants till about the year 1567, when it dropped. The ware is modelled in terra cotta, covered with an enamel glaze of a similar composition to that of the Majolica ware.

The collection of Venetian glass contains 90 pieces, remarkable for great variety of form and technical excellence in workmanship, evincing great originality and beauty, and particularly valuable to our workmen in glass, as giving very many examples worthy of imitation and study; in fact, I fear that our working glass-blowers have scarcely any ideas of artistic outlines, and have great need of being familiarised with such forms as these. Our glass is beautiful in colour, excellently cut, expensively got up, but how very little of it can be commended for form. Of late, however, I have noticed specimens which show great improvement in this respect, and if our workmen have opportunities of seeing what is good, I doubt not they will soon appreciate it.

The manufacture of Venetian glass was carried on at Murano, an island adjacent to Venice, and here has originated or been carried out all that is curious and beautiful in glass from a very early period, such as the Laticinio or filagree, those delicate web-like spirals; the vitro di trina or lacework glass; the millefiori eccentric patterns of various colours, also glass enamelling and gilding. It was also here, if I do not mistake, that glass mirrors were first made.

Next we have to consider the specimens of enamels of Limoges, of which there are 25. These are mostly plaques, containing historical subjects or portraits; some by Léonard Limousin, and are very desirable, because these productions are limited in quantity and difficult to be obtained. Till very recently this art of enamelling has, I believe, never been carried on to any extent for decorative purposes in England, but I think it is a very tasteful and beautiful form of ornamentation, applied either to metal work or furniture, and likely to be far more extensively employed than has hitherto been the case; therefore, I say, collect good specimens of it wherever they present themselves, for how can workmen be instructed, unless you have examples to show them what can be done.

The specimens of ornamental metal-work number about 100. They give examples of brass and bronze casting, engraving, and damascening of the Cinque-cento period. Most of these are of a class meriting careful study by our designers and workmen, for this is a branch of art-manufacture in which we are sadly in want of workmen of artistic feeling, the nature of the process requiring that, after the cast comes from the mould, the finishing should be done by men who comprehend the intention of the modeller. The French bronze trade is of great importance; it employs a vast number of hands, and, besides supplying an immense home demand, exports very largely to every country where a love for art exists.

The Italians of the fifteenth century were renowned for their artistic working in metal. Who has not read the life of Benvenuto Cellini, and been delighted with the burning enthusiasm he throws into all his artistic undertakings, and the vivid picture he gives of artist life as it was in his day?

There are several very fine specimens of Italian metal work in this collection, but I will speak more particularly of those which are represented by photographs. Firstly, that beautiful door-knocker in bronze, said to be by Giovanni di Bologna, in which the figures are so gracefully entwined, so fancifully and artistically rendered. Then those brass ewers, alike elegant in form, and valuable for the art displayed upon them by the engraver; and the salver, too, covered with rich ornaments and groups of figures; more precious even are the exquisite bronze candlesticks, so elegantly ornamented with the delicate threading of silver damasquinerie, worked, I presume, after Moorish models.

There are many objects of great interest, such as the bronze fire-dogs, standing 4 feet high, rich in foliage and figures, and impressed with the arms of Barberigo of Venice; there are clocks, inkstands, saltcellars, lamps, locks and keys, and various utensils, all bearing on them the stamp of artistic minds, and most valuable as models for our study.

The collection of medals is particularly fine, and numbers above 100. An examination of these will show that the Italian artist of that day aimed at something more than a profile outline of a head; he gave it all the *vraisemblant* features of a picture, almost the texture of the skin, a life-like look, well worthy of study by medallists of the present day.

The collection of furniture contains some interesting pieces, gems in their way, and several very curious, and useful for the suggestions to be derived from the study of them. At the time this furniture was made, people had not arrived at that appreciation of comfort and luxury which prevails at the present day; it must be studied, therefore, for its artistic quality and not servilely copied.

The furniture of houses in the fifteenth century was generally limited to objects of immediate use, such as the bed, tables, chairs, buffets for the display of plate, and chests more or less ornamented, and all of these constructed somewhat rudely. As the revival of art and literature extended its influence, the demand for ornamental furniture increased, and we find it constructed with more care, and men of talent in art designed it. Vasari tells us that Baccio d'Agnolo and his sons were celebrated as sculptors for furniture in the middle of the 16th century. Veneering, also, with rare woods was now introduced, and the re-invention of Tarsia work, or marquetry, as we now call it, allowed of very beautiful ornamentation.

This Tarsia work is the inlaying of various woods in ornamental forms, and Vasari informs us that Giuliano and Benedetto Maiano were renowned for this kind of work, and which was brought to a higher degree of perfection by Giovanni di Verona, who invented processes for shading and staining the woods.

All who visited the Soulages Collection must remember the three mirror frames represented in the photographs. What an example of art work is that circular frame said to have belonged to Lucrezia Borgia; how admirable is the carving of the delicate scroll blended with figures and animals typical of good and evil. Then the square frame mirror of such fine artistic design and masterly execution. And, thirdly, that elegant frame fitted to a stand so simple and beautiful, so exquisitely detailed in the carving. This belonged to the famous Malatesta, Lord of Rimini. Such works as these inspire an art workman to rise above common things, to be dissatisfied till his hand acquires a higher touch of art than it had before.

There is another mirror frame in ebony of refined and quiet taste, inlaid with lines of ivory gracefully interlaced. The series of chairs is very curious, particularly the folding X chairs of the ancient curule form. Several of them are represented in the photographs. They approach very nearly in style to the gothic, but the transition to more modern ornament is perceptible. There are four other chairs of this form which are remarkable for their beautiful inlay in geometrical mosaic work of ivory and light woods on walnut ground, and are wonderful for their perfect finish and workmanship. They must have belonged to one of the Dukes of Urbino, as the device of that family is represented on each of them.

There are many other chairs of various designs, some very peculiar in form and elaborately carved, as can be seen in the photographs, which also give the designs of the two richly carved coffers or chests, such as it was usual in those days to present to a bride with her *trousseau*. These coffers were generally the work of sculptors of repute. I refer you to the photographs for representations of various tables, buffets, dressoirs, and cabinets, more especially the one numbered 690, which is ascribed to Bachelier, a sculptor and architect, of Toulouse, of about 1550, who had a great reputation for works of this kind, and is said to have been a pupil of Michael Angelo. This cabinet is highly decorated, and is ornamented with inlaid woods.

I must not omit to mention the superb lanthorn, from the Gradenigo Palace at Venice, a magnificent example of cinque-cento work of bold and artistic design, worthy of careful study.

The series of tapestries are interesting, being of a very early date and uncommon style, and the woven and embroidered hangings are very useful as patterns, which deserve particular notice by our designers.

There are various other objects in this collection to which I think I ought to have directed your attention, but I am fearful of going too much into detail, and wearying you with a monotonous description of beautiful things. I cannot, however, allow myself to omit some allusion to the carved stone chimney piece, which is, I think, considered the most valuable object in the Soulages Collection. Its date is about 1500. The size is 7 feet 6 inches high, by about 8 feet wide. The jambs are decorated with foliage, shafts with highly ornamented consoles supporting the hood or canopy; on this is the Entablature, its mouldings richly carved, and the frieze filled with a series of figures representing subjects of hunting, all executed with the utmost skill and high finish.

Now all the fine things in this collection which I have thus imperfectly brought before your notice can be acquired for the country for the sum of £15,000. Casts of the most important specimens could then be sent to the provincial towns, and the collection itself sent occasionally. Lodged in a national museum, they would carry with them a well of knowledge most essentially valuable to us as a manufacturing nation; to each and every art trade they offer something suggestive of beauty, and, therefore, of value.

A national museum of objects of tasteful art, is a practically valuable property to the country. To raise the standard of taste, is to extend our commerce. I quote the words of the celebrated Necker, who says "Le gout est le plus adroit de tous les commerces."

Taking the productions in which art gives the element of value, let us compare the exports to foreign countries, not colonies, from our own country, with those of France, in 1855:—

	France.	England.
Furniture	£1,000,000	Nil
Bronzes	300,000	Nil
Paper-hangings	100,000	Nil
Silks	8,000,000	£2,300,000

And in this last article of silk, if the value of the ornamented silks were abstracted from that of the plain, I fear it would give a comparison of about 20 to 1 against us.

But it does not end here. Our cotton and worsted fabrics, and many other goods, compete in many parts of the world, and the most tasteful goods must carry the best price. We cannot afford to stand still; we *must* advance.

When I look back to what Colbert—the great Colbert I will call him—did for his country in fostering art for manufacturing purposes, and consider the niggardly help given by the Ministers of our own country, I come to the conclusion that parliamentary discussion so exhausts their energies that they are unable to appreciate the importance of many subjects that act upon the manufacturing interests of our country, and of these the art of design is of the highest importance. Yet, even if they considered political interest alone, they would not be deaf to the wishes expressed from the various manufacturing cities. Some time ago I recollect reading memorials from the merchants, manufacturers, designers, and others, of such places as Birmingham, Halifax, the Staffordshire Potteries, Hull, Oldham, Sheffield, praying the Government to form a trade museum, containing examples of art works; and something has been done no doubt, but how difficult has been the process, and what a long way are we yet from attaining the sort of collection which a country like ours ought to possess! Compare it with the Hotel de Cluny at Paris, but there they have a minister whose duty it is to superintend museums of art, and to render them as complete as possible. Here we have but the beginning of a system. Certainly the President of the Council of Education was last year constituted the minister responsible for the artistic and scientific instruction to be given to the people. This minister has so little power, however, towards forming this museum, that he assured a deputation, consisting of the most eminent architects and manufacturers, who waited upon him, recommending the purchase of the Soulages Collection, that though he fully sympathised with them, and was most desirous of obtaining this collection for the country, he had no means at his disposal —the whole yearly grant, in fact, towards forming this art museum was £2,000.

The British Museum has yearly grants for obtaining objects of antiquarian interest or ancient art, to the extent of £15,000. The National Gallery has a committee who obtain large grants for doubtful pictures of high art, for £14,000. But for obtaining examples of art works applied to manufacture, we have a minister with no funds. The only resource left to us is to address ourselves to those who, like ourselves, feel the necessity of advancing the arts of design as applied to the manufactures of our country, and together raise our voices to make known to our government what we consider essential towards developing its progress.

DISCUSSION.

The following letter has been received by the Secretary:—

SIR,—Of the great importance of the Soulages Collection, and other examples of mediæval and ancient art, being secured to the nation as they occur in the market, there can be no doubt, and I am truly glad to see the subject brought under the notice of the Society, a subject that directly bears upon the arts, manufactures, and commerce, one and all; upon the arts, by placing before our artists matters of history and precedent; upon manufactures, by suggestions in colour, form, and material; and upon commerce, by improving our productions and extending our markets in quarters where we are beaten by art rivals without one tithe of our material advantages. As a whole, the Soulages Collection is most valuable, and though a judicious selection would, perhaps, enhance some specimens and deteriorate others, it ought to be taken as it is, if we are to form a creditable Mediæval Museum of Art applied to the uses of domestic life. We are a home people, and all that tends to refine that sacred place ought to gain our affections. It has been the aim of our artists to decorate the walls by putting large art in small pictures, and what we want still more is the art to put a little more extended feeling in our furniture and effects. To gain great ends we must not be sparing of our pence; if we are ever to have an "Hotel de Cluny" (and we have more than one edifice suitable in London) we must not be chary of the furniture.

I am, &c., JOHN LEIGHTON.

Mr. FARRER fully agreed with the author of the paper that this was an appropriate place in which to discuss the desirability of the purchase, by the nation, of the Soulages Collection, inasmuch as in the rooms of this Society the Exhibition of Ancient and Mediæval Art had been held some years since. The importance of establishing museums as aids to art in every town of importance, and even in many of the smaller towns, had been recognised by the governments of Europe, and hence exhibitions of that kind had been greatly multiplied throughout the continent. The sum required for the purchase of the valuable collection of works of art now under consideration was so trivial, that it was to him a matter of surprise that there should be any hesitation upon the subject, because, in the present day, it was very seldom that a collection of this kind came within the means of attainment. The result of the proverbial tardiness and reluctance of our government in matters like this, was that the English people were charged with being destitute of artistic taste. It was true that the country at large possessed two-thirds of the most valuable pictures in the world, but it was difficult to convince the English government of the necessity of securing such things as they came within their grasp, and on many occasions the most valuable specimens of art had been allowed to pass into the hands of other nations. Mr. Farrer then alluded to the purchase of the Elgin marbles. When this was made it was argued that such fragmental things could be of no value in the promotion of art, but it was now acknowledged to have been one of the most valuable acquisitions ever made for the country. Sir Richard Westmacott, in reply to an objection taken by a member of the then government, that such broken specimens could be of no value to the sculptor, said that it was from these fragmental beauties, when combined and regarded as a whole, that the finest works had been produced. He thought, in a question of this kind, it was the working man—the artisan—who ought to be mainly considered. The acknowledged superiority of the French artisan, in taste and beauty of design, had been commented upon in the paper, but the French would not have taken the lead in matters of taste if it had not been for the Louvre, the Tuileries, and the Luxembourg. At every turn in the French capital some object of beauty in the arts was presented to the eye, and the artisan unconsciously imbibed the true spirit of those works, and carried it out in his productions. The artisans of this country required no actual teaching from government; all they required was the opportunity of studying really good models in museums, and he thought it was the duty of a parental government to provide such museums. In every continental country with which he was acquainted, the government recognised the importance of providing means of artistic instruction for the people, and why should England be behind them? He strongly advocated the purchase, by the government, of the valuable collection of specimens of art which had been so ably referred to in the paper that had been read.

Professor DONALDSON thought they were deeply indebted to Mr. Crace, as a manufacturing artist, for having pointed out the influence which this collection would have upon the artisans of this country in producing articles for the ordinary purposes of life. There was no doubt that we were greatly in want of really good studies, and it was only by multiplying these that the workman could be taught to apply the skill which he naturally possessed. It was useless to refer the artisan to nature alone. He must have principles to guide him. It was not enough to place before him mere leaves and animals; it was necessary that the art element should be infused into his productions. Mr. Crace was therefore quite right in saying that examples were required in order to produce a good school of art. It had been the object of France and other continental nations to introduce the finest examples into their schools of art, and hence the French had acquired their pre-eminence in artistic design. The French artist was brought under an organised system of education and training for his profession, and thus acquired the elementary knowledge and manipulatory skill which enabled him to attain such mastery in his art. He thought it was mainly owing to the schools of art maintained in France that the French artist was enabled to excel in the styles of various periods. Unless the workman was instructed upon true principles he could not produce works which would stand the test of ages, although he might satisfy the passing passion of the day. The works before them which were now so much admired, had also received the admiration of Popes, Cardinals, and Princes of Italy. Would that a similar love of art existed among our ministers in the present day. Some striking statistics had been quoted by Mr. Crace, showing the bearing of this question on our export trade in art manufactures. It was true there was a substantial character and an excellence of material in English manufactures, but the superiority of design and tasteful manipulation of the French productions, gave them the preference in the market, even at the sacrifice of real utility and excellence of workmanship. Manufacturers were obliged to go to the expense of providing their own models, and the opportunities of obtaining really valuable ones were extremely rare. If the government allowed this opportunity to pass, and permitted this collection to become dispersed, he thought it hardly possible to collect again such a number of splendid examples in various classes of art as were contained in the Soulages Collection. It would seem that our government could not appreciate the value of placing before our artisans first-class examples. They authorised their agents to go to only a certain amount in the purchase of specimens of art, and so the first-class articles were secured by private persons or foreign nations. It was remarkable how many continental towns had become great and celebrated merely from the perfection to which a particular class of manufacture had been brought there. It was true that many of the most beautiful specimens in this collection were of a class to serve none of the useful purposes of life, yet, as examples of art, they were invaluable. It might be that some of our great manufacturers were rich enough to procure a few specimens for the study of their workmen, but it was found that unless they had a large variety, a sameness of style would prevail in their productions. On these and other grounds he considered it was of the first importance that the Soulages Collection should be secured to this country, and he hoped the public would express this opinion so strongly as to give confidence to Lord Granville in urging this matter upon his colleagues.

Mr. RICHARD MOORE said that, as a working man, he would urge the desirability of purchasing this collection —not for any special benefit that it would confer upon those similarly employed to himself, but because it would in some degree afford to the artisans of this country those opportunities which were enjoyed to a much larger extent by their brethren abroad, and would serve to develop the powers which he believed to be inherent in them. They must be aware that a few years ago there was great paucity, in this country, of examples worthy of study as works of art, and formerly the artisan was almost entirely shut out from every kind of art exhibition. Nothing appeared so desirable as to starve the mind of the working man, so that he should really possess no information on the subject of his handicraft. When the late Mr. Hume and other philanthropic members of the House of Commons exerted themselves to open the cathedrals to the public, and to add to the museums as well as to open them for a longer time, there seem to be a general disbelief on the part of the educated classes as to the value of those institutions to the working community, and it was not until the late Sir Robert Peel joined in that movement and gave it the sanction of his authority that anything practical was done in that direction; it was not until he had avowed his opinion that valuable works of art were not so much in danger of injury at the hands of the artisan as from those of the vulgar rich, that the national exhibitions were opened to the working man. In the branch of manufactures with which he was connected, they had an association, in which a small endeavour had been made to collect a library of ornament and specimens of castings which they believed to be valuable in their occupation, but their efforts only served to show how feeble were the exertions of a few individuals, in comparison with what the government of the country had the power and means to effect, if those means were only judiciously applied. No one would desire that the government should launch into an extravagant expenditure for these objects, but the manufacturers were called upon day by day to execute works of different styles and periods, and it was of the highest importance that they should have some means of testing the correctness of the style of work in which they were about to engage. This had been effected to a considerable extent in one department at the South Kensington Museum, where the artisan could find a rich store of instruction. What they wanted was examples which bore the stamp of genuineness and authenticity, and he was sure that museums of that character would be largely frequented by the working classes. This was a matter which ought to become the especial care of one department of the government, as was the case abroad. It was not asking the government to do anything beyond its province. The examples of this collection belonged to a period famous in the arts, and the production of similar works would be certain to create a demand for them. When they considered the rapid increase that had taken place in many departments of art manufacture, they must conclude that large opportunities still existed for enriching the country by the application of genius and energy in this direction, by successful competition in articles for which their French neighburs at present carried oft the palm. There could be no doubt of the superiority of most of the productions of French handiwork. With every desire to think well of themselves, the English workmen could not but concede the palm to them in almost every department of art work; but when they compared the means of instruction at the disposal of each, the difference could easily be accounted for. The English artisan had been starved into inferiority of production by reason of the apathy of the Government, and he was certain that money to a moderate amount judiciously applied in this direction would return its full value to the country in various ways, some of the principal of which would be the improvement of the condition of the working classes, and, by the increase of our exports of art works, the benefiting to a large extent the trade and commerce of the country.

Mr. RICHARD REDGRAVE, R.A., remarked that allusion had been made to the idea that in high places the notion was entertained that this collection did not abound in really beautiful productions. It was to be remembered that in the early times of Christian art in England there was no anxiety manifested for the purely beautiful, and the art decorations of that period were for the most part confined to what was symbolical, but at a subsequent period the purely beautiful was aimed at by the artist. When they recollected the productions of Michael Angelo, Raffaelle, and others of that period, they could not but acknowledge that these masters were entirely in search of the beautiful; and they could hardly suppose that men of such calibre could err in their notions of the beautiful, or fail in their realisation. The merit of works of art must be judged of by men who had made that subject their study, and with all deference to the Chancellor of the Exchequer, he could hardly recognise him as a competent judge on such matters. He thought a great mistake would be committed by the government if they allowed this collection to escape them. Mr. Redgrave proceeded to contrast the almost feminine character of the ornamentation of modern Sèvres china with the bold and brilliant style of the specimens contained in this collection, and remarked that, had the manufacturers of that period been possessed of the superior material now employed in pottery these productions would have been of a still finer character. Ought they, therefore, for the trifling consideration of some £15,000, to allow a collection, stamped with the genius and beauty of the period at which it was produced, to be lost to this country? for then the great artists of the day did not think it derogatory to furnish their own designs for such articles; and ought they to hesitate in securing these examples of beauty for the benefit of our artizans, who were pronounced to be behind their continental brethren, and that, too, in the judgment of those who had been educated to a true appreciation of Art. He hoped the effect of this meeting would be to induce the Government to reconsider this question, and not to allow a collection like this to be dispersed and lost to this country.

Mr. E. NASH was connected with a numerous class by whom the value of such a collection as this was duly appreciated, and it was his anxious desire that it should be secured to the country. In all these cases it was found that the government held back till they were subjected to a pressure from without, and he supposed this would happen with regard to this collection. He believed the £15,000 could be readily raised by public subscription, limited to £1, and if the government failed to do their duty in this matter, he should like to see some such suggestion carried out, so that this collection might be purchased by the public at large, and deposited in a suitable building for the benefit of the country.

Mr. J. A. ROSE did not agree with those who had asserted the pre-eminence of the French productions as compared with those of the English manufacturers. He fully concurred in the necessity for urging upon the government the purchase of this splendid collection in its entirety, for he thought it would be most valuable to all classes of the community. It was a collection as valuable to the educated and rich as to the working artisan and mechanic. There had been periods of a species of madness in this country, when some of the finest collections of art had been entirely lost for want of seizing the proper opportunity to acquire them. In illustration of this he might mention the magnificent gallery of pictures collected by Charles I., which, under the hammer of the auctioneer, were scattered all over the continent. He thought, if a similar course were taken with regard to this collection, the best articles would be secured by foreign agents with unlimited commissions, whilst this country, under the parsimonious system adopted by the government in reference to matters of this kind, must be content with the inferior examples. Mr. Rose added that in the event of this collection being secured to the public, he hoped that some locality more central and more easily accessible to the working classes than South Kensington would be fixed upon for its exhibition. For his own part, he should like to see a museum at Wapping.

Mr. HENRY COLE, C.B., in answer to Mr. Rose, said that the question of the purchase of the collection had nothing to do with the site where it might be deposited. The purchase should be made for the instruction of all classes throughout the United Kingdom, and if, when bought, the collection should be sent to the Kensington Museum, it would then be circulated among the various seats of manufacture in all parts of the country, as was already done with the articles now in that Museum. He agreed in the opinion that the higher classes needed instruction in art as much as the working classes. When Schools of Design were first established here, they were intended solely for the benefit of the artisan, and they did not succeed very brilliantly under that erroneous aspect. After some trial of the system, he (Mr. Cole) was charged to give what aid he could in the development of the Schools of Design, and he then said that if he had to elect between the two, he would teach the higher classes to appreciate art, for they could afford to pay for its productions, and if a demand were thus created, the supply would follow. He begged to correct a misapprehension which Mr. Rose appeared to entertain with regard to the working classes not visiting South Kensington Museum. Special arrangements had been made for the convenience of the working classes, and the museum was open of an evening for their benefit. In that respect it stood alone. The number of visitors of that class had been far larger than was the case with similar establishments more centrally located; and if the present statistics continued to the end of the year he believed the visitors to South Kensington would outnumber those to the British Museum. With regard to the latter establishment they were so cramped for room that they were at a loss how to dispose of the late importations from Greece.

A **Member** suggested that there was plenty of room in Smithfield.

Mr. **Cole** would rejoice to see a good museum in Smithfield, and also one at Wapping, but the idea of a central museum for three or four millions of people was absurd. They required five or six museums, and he hoped they should have a good museum at South Kensington, and also that the National Gallery would be kept in Trafalgar-square. He desired to see a museum at Victoria-park, and they had a valuable collection of pictures at Dulwich which he hoped would be retained in that locality. After all, he thought people would go where there was the greatest attraction, regardless of the consideration of locality. They found that large numbers went to the Crystal Palace, notwithstanding its distance from London, solely because it was attractive to the public. If he (Mr. Cole) were free to act, and had sufficient means at his disposal, he would establish museums in the parks, which possessed natural attractions to the public, and he thought there would be no fear of a want of visitors.

Mr. **Rough** expressed a hope that, if this collection were secured to the public, it would be placed in some situation where the artizan could have the benefit of it. He agreed in the superiority of French productions of art over those of the English. The reason for this was, that in Paris there were constantly objects of beauty which the artisan could study and admire; the Louvre, the Tuileries, and the Luxembourg were always open to inspection. What they wanted was similar advantages in this country.

Mr. **Simpson** remarked that the important part of the question was, how the result which was so unanimously desired could be arrived at, namely the possession to the country of this collection of works of art. He hoped that some strong expression of the feeling of the present meeting would be made to the proper authorities, so that for the trifling consideration of £15,000 so truly valuable a collection would not be lost to the country.

The **Chairman** said it now became his duty to propose a vote of thanks to Mr. Crace for the paper he had read. He thought there could be no doubt as to the necessity of adopting all the means in their power for improving the artistic taste of the country, and he quite agreed in the opinion that there was great room for improvement in the taste of the upper classes. One great difficulty at the present time, with regard to art manufactures, was in the taste of those who were the purchasers of such articles. There was little difficulty in getting really good works executed when there was a demand for them. The alleged superiority of French art production was owing to causes too numerous for him to mention; but no doubt our great deficiency in this respect had first led to the establishment of Schools of Design. That was followed by the Copyright in Designs Act, which, however, had proved very inefficient for the purposes for which it was passed, inasmuch as the longest period of protection which it afforded to models for manufacturing purposes was three years, and in some cases only six or three months. The system of copyright in these matters in France was extremely simple, and in this respect he thought we should do well to imitate our neighbours. In France the right in a design was secured to the designer, and if anything similar was required by any other manufacturer he must employ a modeller to produce an original design. This accounted for the extensive employment of modellers in France. The reverse of that practice existed in this country, for a manufacturer never thought of employing a modeller if he met with a design already suited to his purpose. Hence there was comparatively little employment for artistic workmen in England. He gathered, from the tone of the meeting that they were unanimous on the subject of the desirability of securing the Soulages Collection to the country, and indeed, amongst intelligent men, he thought there could be no difference of opinion upon that subject. Drawings were very good as far as they went, but those who had any experience in manufactures were aware of the inferiority of drawings in comparison with models. In order to make schools of design effective, they must also have museums of art manufactures.

A vote of thanks was passed to Mr. Crace.

Mr. Crace's paper was illustrated by numerous specimens from the Soulages Collection, kindly lent by the Committee of the Manchester Art Treasures Exhibition, as well as by a series of photographs, representing all the principal specimens. These will remain at the rooms of the Society until Tuesday next, for the inspection of members and their friends.

The Secretary announced that on Wednesday evening next, the 3rd February, a paper by Mr. Robert Rawlinson, "On House Accommodation—its Social Bearing, Individually and Nationally," would be read. On this evening the Earl of Shaftesbury will preside.

The following letter has been received by the Secretary since the meeting:—

Dear Sir,—Several points arose during the discussion last evening, on some of which I wish to offer one or two observations.

The most suggestive and popular exhibition ever held within our walls, was probably that to which Mr. Farrer alluded in the course of his speech, and to which he himself so largely contributed, and in the careful management of which he took so important a part. That collection of objects of mediæval art was the origin of much of the taste for this class of historic art which has since so largely and usefully prevailed. To it we probably owe the interest which the Soulages Collection has so extensively excited, and the anxiety so universally expressed that one so unique and valuable should become public property. Under these circumstances it is certainly much to be regretted that our government should hesitate to purchase it, but I am not one of those who attribute that hesitation to either ignorance or indifference. It is the result of those discussions which always take place in the House of Commons when any vote is proposed for material educational apparatus. The fault is with us—the people. We send representatives to parliament who cannot understand or appreciate objects of art, and who think they are obeying the behests of their constituents when they object to furnish funds for the purchase of collections like this. The remarks made by some of our skilled workmen during the discussion afford additional evidence that they really understand the matter much better than many of those who affect to represent them.

Looking at the question simply as one of Political Economy, on which statesmen ought to be well read, national collections of art should be promoted. Anything which tends to improve the public taste, profitably occupies the time and faculties of producers, by the ordinary process of demand and supply. But, besides this consideration, which was so fully and ably descanted upon by some of the persons who took part in the discussion, we ought to know that anything which attracts foreign visitors to our cities, is so much gain to the national revenue. I am of opinion that the works of art, the museums, and the splendid buildings which so largely abound in Paris, Rome, Florence, Munich, Dresden, and elsewhere on the continent, are ultimately paid for by the innumerable foreigners who are tempted by them to spend time and money in their contemplation.

I cannot but hope and believe the ventilation of this question last night by Mr. Crace and the competent authorities in the room who supported his views, will lead to the preservation intact, and for national purposes, of the Soulages Collection.

I am, &c.,

January 28, 1858. THOS. WINKWORTH.

SEWAGE OF LONDON.*

By Henry Allnutt.

Amount of Sewage per Head of Population.

In the report of the Metropolitan Drainage, page 15, we find it stated there are 15,249,777 cubic feet, or 95,311,106 gallons of sewage passing off daily from 75,251 acres, or 117½ square miles, the area of London, and that the population being taken at 2,656,000, it gives 5·8 cubic feet of sewage per head.

Now, 5·8 cubic feet is 36 gallons, and treating this as the amount of sewage for each individual in the population is really monstrous; if we approach the London sewage question in this way, and adopt these figures, it cannot surprise anyone that we are confounded, and utterly at fault to control and apply such a body of liquid to agricultural purposes. The mere drainage alone of 75,000 acres of land, or, as the referees recommended, 226,000 acres of land, in the matter of rainfall and spring water, without a particle of sewage, would be no light undertaking, but when we add the sewage to the water, and then propose to pump up that sewage and water from a considerable portion of this area daily (nearly 24,000 acres), and convey this with the water and sewage that flow down by gravitation from the remainder of the area (24 miles) to the sea reach, we have a task, indeed, before us, enough to tax human powers a thousand times more seriously than the launching of the *Leviathan*. But, I ask, wherefore the necessity of such an undertaking—why touch this mass of water? I contend that there are two distinct objects to deal with in what is called the London Drainage, which as long as they are blended together will defy the ablest intellect, but when separated will be, individually, easily manageable.

The first object is to drain the present area of 60 square miles, or, adopting Mr. Bazalgette's figures, 117 square miles, of the rainfall and spring water, into the Thames, and we may add to this the water that is thrown into the kitchen sinks of dwelling houses; for this latter is, at most, but dirty water, and would never prove offensive if allowed to run into the Thames with rain or surface water. No one can argue that this water from the kitchen sinks is of any agricultural value, or worth the expense of collecting. The most direct course should be adopted for the removal of all this rain, and, what I may term, harmless water, to the river. The present sewers, as far as they go, answer this purpose, no doubt, in the lowest situations. The mouths of the sewers should either be rebuilt with large sectional areas for a greater discharge of water during low tide (see the extract from Mr. Giult's Report, page 315, in the Referees' Report), or an intercepting sewer could be formed to catch the water from the higher ground, and thus make the discharge continuous at all tides.

The second object is to remove the really offensive portion, and I believe that instead of 36 gallons per head, two gallons would be an ample allowance for each individual, and this should not be permitted to run into the Thames. To show how reasonable I am in saying two gallons, I find in the said Report (pages 51 and 52) that each adult voids, on an average, 46 oz. per diem (40 oz. urine, and 6 oz. fœces). Let this be considered 3lbs. As two gallons of water weighs 20 lbs., we shall still dilute the excrement with nearly six times its weight of water, viz., 17 lbs. In properly constructed water-closets, it is found that only 6 pints of water is employed each full lift, and therefore I submit that 16 pints is a sufficient allowance to each head of population, and will even allow for water from certain manufactories, &c., when we remember we are calculating as though the 2½ million of inhabitants were all adults, which of course is not the fact. Now if the present sewage, with nearly half of the cesspools not yet abolished, is worth 2d. a ton, and we reduce it to one-eighteenth of its present bulk, the value of the sewage will be more than 3s. per ton. Any fertilising properties that may escape in the washings of the streets will be far more than compensated by the additional water-closets which have still to be provided for 140,000 houses.

I may here observe that some parties place an agricultural value on the water that is poured down the sinks of dwelling-houses, and also from the washings of the streets, as above alluded to.—First, as to water running down the sinks; it really is nothing but dirty water, from the scouring of pots and rooms—slops from the bedrooms are thrown down the water-closets, not into the sinks; however, a short code of regulations could easily be drawn up and circulated amongst the inhabitants. It would be directly to their interest to pay attention to these orders for the sake of the income derived from the sale of the sewage, and consequently the lightening of the parish rates. Secondly, as respects the water from the streets. If scavengers do their duty, and remove the mud and dirt daily, there really cannot be anything left in the mere washing of the streets, worth collecting and removing to any distance for agricultural purposes. We must be content to stop somewhere. It might also with some reason be said that pure clean water is useful for irrigation, which is true, but it would not pay to collect it day by day all the year round, and convey it to farms some miles distant. The question is, which course is the best to adopt; to run all the sewage of London entirely to waste into the sea, or to separate and retain the most valuable portion and allow the waste to flow into the river. If we attempt to utilize the most valuable part of the sewage, it is within our power, but when we endeavour to make use of the present bulk of sewage, we are overpowered; our motto should not be all or none—there must be some waste in every operation, and after all, the water, if separated from the real sewage, will perform the duty of scouring the river.

The person holding the office of Inspector of Nuisances could regulate the manufactories, stables, cow-houses, and slaughter-houses, and see that proper steps were taken to make the communication either to the rain-water sewers or to the real sewer pipes. As a case in point, I maintain that the water which runs from the breweries should flow at once into the river, as also the condensed steam from steam-engines. On the other hand, urinals, stables, &c., should discharge into the sewage proper pipes.

In page 20 of the Report, the referees state that "they have carefully observed the condition of the London streets, and that the water which flows from them, especially in rainy weather, contains foul organic matter to a serious extent." A more particular attention on the scavengers' part would, in a great degree, remedy this evil, and rainfalls are only occasional. With respect to their other remarks upon the rain-water pipes being used as soil pipes, and gutters in many of the inferior streets receiving every night large quantities of urine and other offensive matter, these evils might be, to a great extent, removed by the erection of proper water-closets.

Disposal of the Real Sewage.

We now arrive at that part of the subject which refers to the treatment of the sewage, supposing the plan is adopted for bringing it into a much smaller bulk. I am still of opinion that London should be divided into districts, and that the sewage proper should be run into a reservoir, or, say two receptacles, in case an unforeseen difficulty arises to prevent its being removed immediately. It now becomes a question as to whether it should be deodorised or removed from the reservoirs to the land as quickly as possible. I do not attempt to decide this question, but I may say that if the former course is followed it will necessitate a great outlay for the chemical or charcoal without a correspondingly increased value to the sewage. I think my plan of removing the sewage in closed railway trucks (wrought iron) might be carried out. We have information in the Report, that the sewage is conveyed from some towns in pipes, but as respects the London sewage, I think the distance into the country would be too great, and it appears to be a fact that pipes are liable to be clogged or filled up (see Report, page 475); therefore I consider that the better plan would be to convey the sewage in closed railways trucks on a line of railway to the neighbourhood of the farms requiring it. A consideration now arises as to which will prove the most economical method of filling the trucks, whether by forming an incline way down, to below the reservoirs, and so permitting the sewage to flow by its own gravity into the trucks, or by pumping up the sewage from the reservoir into the trucks. I conceive there are many objections to pumping; first, the ordinary kind of pumps is not adapted to raise sewage (see Report, page 38-389), and if screw pumps or scoop wheels are employed, it may require two or three lifts; secondly, the denser parts will always be settling at the bottom of the reservoir, and to prevent this the sewage must be agitated during pumping by forcing in air at the bottom of the reservoir, or by other means. This will have a tendency to increase the nuisance; the more it is disturbed, the greater will be the emanations from the sewage. On the other hand, if trucks are filled direct from the reservoir, the latter could be formed like an inverted cone, and the sediment would be the first matter to flow into the trucks. I would counter-balance the weight of the truck by having an empty one descending as the loaded truck was being drawn up the incline, so that the power would only be exerted to draw up the sewage. The trucks, if constructed of wrought sheet iron, (perhaps old boiler plates might be used) somewhat in the shape of an inverted cone, discharging from the bottom, could be made to hold about 6 or 8 tons, being 1344 or 1792 gallons. A truck 12 feet long, 6½ feet wide, and 4 feet deep inside in the clear, would hold nearly 8¾ tons or 1950 gallons. Now, if there are at present 95,311,106 gallons of sewage daily, and we reduce it to $\frac{1}{18}$=5,295,061, and divide this amongst 10 districts, it would give 529,506 gallons to be removed from each district daily, and, lastly, if a truck would contain 1,900 gallons, it would be about 280 truck loads a day, or under 12 loads an hour. If we have 20 districts instead of 10, the result would be only 6 truck loads of sewage an hour to remove, which could be deodorised or not, according to circumstances. With respect to the cost of conveying the sewage into the country, I think when a large quantity would have to be regularly removed, it might be done at ¼d. per ton per mile. Supposing we wished to convey it to Ascot Heath from Walham-green, near the West London Railway, the distance round by Hounslow would be about 26 miles. The cost of one truck containing 8 tons of sewage would be as follows:—Sewage at 3s. per ton, £1 4s., carriage 4s. 4d., total, £1 8s. 4d., or 3s. 6½d. per ton. I cannot enter into any estimate of the expense of working the plan, of the wear and tear, or of the cost of the railway rolling stock, but I think it is quite evident that the value of the sewage would be such as to be well worth the expense of these works for its removal and application to the land.

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* Continued from page 105.

The cost of removing the sewage and rain-water to the sea is estimated at upwards of £5,000,000, but this amount might be found insufficient, and, indeed, may be doubled, taking into consideration the magnitude of the proposed works, and their peculiar nature; whereas, the mere laying down another set of sewers to the water-closets, is no uncommon work, and I beg to throw out the suggestion that there is no real necessity for having the sewers for the water-closets so deep or so low as the generality of the present sewers. The water-closets are not often situated in the basement—there is no necessity that the water-closets should be placed so low in a house. Mr. Bazalgette is stated, in page 21 of the report, to have estimated the cost of draining London in this manner at £10,000,000; £5 a house, for 300,000 houses, would give £1,500,000, but if it amounted to double this sum, you would have a set-off in the value of the sewage, which is stated in the report (page 752) to be £1,444,000 per annum, but nothing whatever of a reproductive nature will arise from the expenditure of £5,000,000 to cast the sewage into the sea; indeed, the estimate is still greater than this when we include the covering of the main channels, which expense is not estimated or provided for in the Referees' Report.

I have only one other observation to offer, and that is, has it thoroughly been investigated, what effect is likely to take place from the abstracting 15,000,000 of cubic feet of sewage daily (the present amount) from the Thames; would not the river, in consequence, be much lower at low water and the bed more exposed, especially when we take into consideration that by the plan of the referees it is contemplated, when the sewage flowing in the main channels in dry weather becomes too low, to let a considerable body of the Thames water into the main channels, to keep up the uniform depth of 16 feet. I, therefore, repeat, when not only the 15,000,000 of sewage, but also a great body of water (the amount of which is, I believe, not even estimated in the report) will be actually abstracted from the Thames (in the dryest season of the year) to assist the flow of the sewage in the channels, there is great reason to fear that the effect on the river will be very serious, in fact, the volume of water will be most materially lessened; we may say that the supply of fresh water will be almost cut off or turned aside from the river in dry summer weather.

From all these remarks it will be seen that we may well hesitate in adopting the scheme for removing the sewage, &c., to the sea, by works of such magnitude, which are even already admitted, in the very outset, to be insufficient in heavy rainfalls; and let us hope that means will be found to remove the really offensive part of the sewage, and deal with that alone, not with a view of casting it into the sea, but of applying it as manure for the land. The supply of guano is not, and, indeed, cannot be unlimited, and a man would be truly considered an enemy to mankind who wasted the gifts Providence had placed within his reach. No one but a madman would cast away his capital, and what else is manure to an agriculturist, the most valuable he possesses, without which he cannot flourish—he may plough and he may sow, with the greatest care and diligence, but without food for the plant how can he expect to reap a rich harvest, nay, he may reap, but what has he worth cutting, if the land has not received its proper dressing of manure; and as steam cultivation is beginning to make itself apparent, manure will be in still greater demand; this, I think, cannot be denied. True, it may be urged that though London may throw all its valuable manure into the sea, this would be no reason why all the other towns in England should waste theirs also. Perhaps not, but the metropolis will be setting a very sad example, and future generations will point at the folly of the present generation, and wonder how men could be capable of throwing away so great a treasure, whilst the smaller towns turned their sewage to a useful account. It may be quite true that in Leicester, or some other towns in England, they may not have arrived at the best plan of utilising the sewage, but, depend upon it, if one way will not answer, another will be discovered. In the present scheme for the drainage of London, we not only do as much mischief as we are able with the sewage of the present day, but we go ahead, and in our plans provide for casting into the sea, and thus wasting the sewage, when London is double, nay, four or six times the size it now is. It is somewhat like a man who is not content with injuring his estate during his own life, but he needs must leave behind him a perpetual charge to drain the estate, ever after, of a great portion of the profit-rent. The sewage of London should be separated from the rainfall and mere dirty water; the former should be looked on as a mine of wealth, and cared for accordingly, whilst the latter should be carried off to the river by the present sewers. Let us express a fervent hope that common sense will prevail.

SOUTH KENSINGTON MUSEUM.

During the week ending 23rd January, 1858, the visitors have been as follows:—On Monday, Tuesday, and Saturday (free days), 3,788; on Monday, and Tuesday, (free evenings), 3,821. On the three students' days (admission to the public 6d.), 775. One students' evening, Wednesday, 57. Total, 8,441.

Home Correspondence.

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LORD PALMERSTON'S MORTAR.

Sir,—In the *Journal* of the 8th January, Mr. H. W. Reveley, in noting the partial failure of the monster mortar known as "Lord Palmerston's," lays before your readers a plan of his own for constructing what he considers "indestructible ordnance," his plan being as follows:—"To construct all large ordnance with a soft steel spiral bore of sufficient strength to resist the explosion, upon which should be cast a metal jacket of brass or iron."

In the first place, the welding of such a mass of steel is open to serious objection. Steel being a metal so easily destroyed by heat, even admitting that the welding could be satistactorily performed, the cast "jacket" would most assuredly destroy it; indeed, I attribute the failure of Krup's steel gun to the cast iron "jacket." By running a fluid metal around the bore, the outer surface would be brought into, and kept in, a welding state, and the cohesive power of the metal materially weakened if not altogether destroyed.

Hammered cast-steel has a cohesive strength about seven times greater than cast iron, but the strength of crystallized steel is not equal to that of cast iron.

I speak of crystallized steel, because I am of opinion that running a "jacket" of cast iron or brass around the steel bore would bring it up to, and for some time keep it at, a welding heat. This would induce crystallisation, and, I fear, on trial Mr. Reveley would not find his ordnance really "indestructible." Then, again, the shrinkage of steel being greater than that of cast iron, a space would be left between the "jacket" and bore. I consider the plan defective even for light ordnance, having, at the end of 1855, constructed a small cannon of malleable iron and steel, the bore being made of the strongest mild cast steel, cast hollow, and hammered on a mandril (it was cast hollow to save welding) to bring the particles into the closest possible contact. It was then heated to a low white heat, placed in the moulding box, and liquid malleable iron poured round it. After finishing, it was submitted to the following tests; first charge, 7 oz. of powder, a conical malleable iron ball weighing 9 ozs., and a wad; second charge, 8 oz. of powder, two conical balls, 17 oz., and wad; afterwards with 8 oz. of powder, three conical balls, 1¾ lb., a wad, and filled up to the muzzle with wet cotton waste, which was driven home with a sledge hammer. This latter charge was repeated several times, when it was found that the steel had split longitudinally from the muzzle for about three inches. I have no hesitation in saying the cannon would have gone to pieces had not the iron been so strong. A gun barrel made from the same iron in the usual way, in Birmingham, stood respectively 7, 14, 21, and 28 drachms of powder and a conical ball, and burst with 35 drachms and a conical ball. 7 drachms is a proof charge, and 2½ a service charge.

I am, &c., W. HAWKSWORTH.

Avon Steel and Iron Works, near Linlithgow,
January 14th, 1858.

REGISTER OF RAINFALL.

Sir,—I am disposed to agree with Mr. J. Bennett Lawes as to the greater accuracy of the larger rain guage. Of the three which I assisted in registering hourly for upwards of five years, in one of our colonies, I preferred one of the following form:—A funnel-shaped receiver, three feet square (9 square feet), surmounts a box of metal, accurately made, down the side of which is fixed a barometer-tube, bent at the bottom, and inserted into the box. The area of the receiver and the contents of the box were calculated, and verified by actual measurement with water.

On falling into the receiver and passing into the box, the water rises in the barometer tube. Water is kept in the box up to a low point in the tube, marked zero, and the length of the tube is painted in terms of the inch on the outside of the metal box. By this means, depending on the relative proportions of the box and receiver, the smallest quantity can be seen at a glance. The neck of the funnel-shaped receiver is to be made small, to prevent evaporation. A small cock at the bottom of the metal box furnishes the means of emptying it. The height of the surface of the guage above the ground, and the nature of the stand or support, will depend on circumstances, but, of course, the former is an important scientific element in the results.

I am, &c., T. E. W.

AGRICULTURAL IMPLEMENTS.

Sir,—On reading a letter to you, published in the *Journal of the Society of Arts*, Dec. 25th, 1857, headed "Agricultural Implements," by Mr. William Waller, of Uddingston, I would merely beg to remark that I was witness to an acre of beans being cut in an hour, by a machine impelled by a pair of horses and guided by one man, in the Carse of Stirling, as far back as the year 1812.

It was the invention of the late James Smith, of Deanston, a name well-known to most agriculturists and machinists.

A model of this machine may be seen in the Hunterian Museum of the University here.

I am, &c., JAMES BUCHANAN.

40, St. Enoch's Wynd, Glasgow, Jan. 11th.

P.S.—I fancy some are still to be found in the Carse of Stirling of this kind, as subsequently improved by Mr. Smith, ere he left Deanston.

Proceedings of Institutions.

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Birmingham.—Mr. Toulmin Smith recently delivered an interesting lecture on "The Fairy Mythology of England," in the theatre of the Midland Institute. The lecturer, who was introduced by Mr. A. Ryland, commenced by observing that mythology, which was the most early association connected with man's history, was full of belief. He should confine himself on that occasion to the popular fairy mythology, as derived from our Scandinavian forefathers, which was more poetic in its parts and nobler in its spirit than the mythologies of Greece and Rome. It was not handed down to us in our own Anglo-Saxon tongue, owing to the early introduction of Christianity; but it was perpetuated in the old written tongue of the North. The lecturer then quoted a translation from the original language of a poetical account of the creation of the "alfs," or elves, as they are now more familiarly designated. Glancing at the legend of Thor having obtained his renowned hammer from the alfs, the lecturer next referred to the great swordsmith, Wieland, who was supposed to have resided in the White Horse Valley, Berkshire, and whose fame had been immortalised by Sir Walter Scott, in his romance of "Kenilworth," and was casually alluded to in a note to "The Lady of the Lake." Mr. Smith illustrated this portion of his subject with translations from the Runic legends. He next dwelt upon the achievements of Beowulf, the parent of knight errantry, and then proceeded to speak of King Arthur. The fullest details respecting the elf-wrought armour of Arthur, were to be found in an old Saxon ballad, descriptive of the monarch arming for battle. This he recited. He then referred to Merlin, who was said to have conveyed Stonehenge over from Ireland to Salisbury Plain in a single night; and who worked in a cavern underneath it, but having fallen in love with the "Lady of the Lake," she placed an enchanted stone over the entrance, and thus gave rise to the tradition that he and his assistants could be heard working at night with their hammers and anvils. Having quoted from the writings of Drayton, who lived two centuries ago, and a ballad composed on the occasion of the visit of Queen Elizabeth to Kenilworth, in 1575, in exposition of this legend, he described Arthur's fairy death in the Lake of Avelon. He, however, ignored the assertion that the history of Arthur was fabulous, and maintained that faith should be placed in the existence of "the Celtic hero." Having observed that time would not admit of his introducing, as he intended, the stories of Guy of Warwick and the destruction of the great boar, and St. George and the Dragon, Mr. Smith pointed out that in the whole range of Old English poetry there was no description of Elfland, but merely vague and shadowy references to it, in support of which argument he quoted selections from Spencer and Chaucer. He remarked that the Scotch bards in this respect differed from those of England, adducing in corroboration a passage from the romances of Thomas the Rhymer. In conclusion he laid down the principle that the northern mythology must not be regarded as having any association with witches and witchcraft, the former being founded on belief, and the latter on superstition; and he closed his lecture by contrasting two old poems, descriptive of the wild orgies of the witches, and the gambols of the white elfs by moonlight. The lecture was listened to with much attention.

Croydon.—The annual meeting of the Literary and Scientific Institution, was held on Wednesday, December 2nd, 1857, Thomas Farley, Esq., President, in the chair. The honorary secretary read the last report, which shows that progress has been made during the past year. The number of members during the first quarter was 301, during the second quarter 478, during the third quarter 633, and during the fourth quarter 333. The total income of the Society for the year was £336 13s. 11d., and the expenditure was £266 3s. 8d., showing a balance in favour of the Institution of £70 10s. 3d. From this, however, has to be deducted a sum due to the treasurer, so that the actual balance in favour of the Institution is £46 1s. 11d. The lectures which have been delivered during the past year have been of a varied and attractive character, and the attendance has been highly satisfactory. Since the 1st of October, 1856, the following have been given at the expense of the Institution:—E. P. Hood, on "The Wonderful Transmigration of Words;" Ellis Roberts, "Entertainment on the Harp;" H. Phillips, "Origin and Decline of Sacred Music in England;" H. Blackburn (two), "Algeria—Its Manners, Customs, and Scenery;" Dr. Steggall, "The Chamber Music of England;" H. Hunt, "Application of Physical Sciences to the Useful Purposes of Life;" G. Grossmith, "David Copperfield;" Dr. Leask, "Life and Times of Mahomet;" G. Grossmith, "Lectures on Lecturing;" H. Phillips, "The Songs of Dibdin;" Angus Fairbairn, "A Scottish Musical Entertainment;" Dr. Spicer, "Æsthetics;" G. Grossmith, "Nicholas Nickleby;" Mrs. Balfour, "Celebrated Women;" Dr. Spicer, "Architecture." Mr. H. Phillips gave his entertainment on March 26, free of charge to the funds of the Institution; as did also Dr. Spicer his lecture on "Architecture," on May 21st. Lectures have also been delivered gratuitously by the following gentlemen:—Rev. J. G. Hodgson, on "A few Common Things;" J. W. Flower, Esq., (Park Hill), "The Study of Natural History;" Col. Rowlandson, (Addiscombe) "The Chain of Brahminical Caste;" Rev. W. H. Johnstone (Chaplain at Addiscombe), "Nineveh;" Rev. W. Mitchell, "The Habits and Instincts of the Hive Bee." These lectures are thought to have done more real service to the Institution than any received from paid lecturers; the list of gratuitous lecturers will be still more extended during the ensuing year. That delivered by J. W. Flower, Esq., has been published at the request of the members, and has been a source of profit to the funds of the Institution. Nearly 300 volumes in the library have been re-bound, partly through the liberality of Mr. Westall, who gave 10 guineas for this purpose. The exchange of books has frequently averaged from 100 to 150 volumes every issue night. During the first quarter of the year, 1878 books were circulated among the members, and during the next quarter the circulation was very much larger. A printed catalogue is in course of perparation. Several donations of books have been made during the past year; 196 vols. have been also added by purchase, many of these being the works of recent and standard authors. The committee regret to report that the reading room has not been as yet made more available, and has not been more used of an evening by the majority of the members for whom it was more especially designed. The committee have not been able to establish evening classes for reading, writing, and arithmetic, as proposed. The difficulty of providing proper superintendence has at present prevented this project from being actually carried out. It is, however, earnestly hoped that evening classes for adults may be among the earliest works of the new committee in the ensuing year.

MEETINGS FOR THE ENSUING WEEK.

Mon. Royal Inst., 2. General Monthly Meeting.
Architects, 8. Mr. Edward M. Barry, "An Account of the New Palace at Westminster, and the progress of building the same."
Tues. Royal Inst., 3. Prof. Huxley, "On Animal Life."
Civil Engineers, 8. Mr. J. Henderson, Assoc. Inst., C.E., "On the Methods generally employed in Cornwall, in Dressing Tin and Copper Ores."
Pathological, 8.
Photographic, 8. Anniversary.
Wed. Society of Arts, 8. Mr. Robert Rawlinson, "On House Accommodation,—its Social Bearing, Individually and Nationally."
Geological, 8. Sir R. Murchison, "On the Succession of the Lower Palœozoic Rocks in the North-west Highlands of Scotland."
Pharmaceutical, 8.
Royal Soc. Lit., 8½.
Thurs. Royal Inst., 3. Prof. Tyndall, "On Heat."
Zoological, 3.
Royal Society Club, 6.
Antiquaries, 8.
Chemical, 8. I. Dr. Bird Herapath, "On the Iodo-sulphates of Cinchonine." II. Mr Mercer, "On Atomic Weights."
Linnæan, 8. I. M. Fée, "On the Nomenclature of the genus *Buffonia*." II. Dr. F. Muler, "On the *Eucalypti* of Northern Australia."
Philological, 8.
Royal, 8½.
Fri. Archœological Inst., 4.
Royal Inst., 8½. Dr. E. Lankester, "On the Drinking Waters of the Metropolis."
Sat. Asiatic, 2.
Sat. Royal Inst., 3. Prof. Bloxam, "On the Chemistry of the Elements which circulate in Nature."
Medical, 8.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[*From Gazette, Jan.* 22, 1858.]

Dated 19*th December*, 1857.

3117. Thomas Hart, junr., and Abel Jones, Blackburn—Improvements in looms called "dobby looms."

Dated 24*th December*, 1857.

3160. George William Hart, 5, Osborne-terrace, Southsea—Improvements in the construction of locks, and in apparatus for cutting keys.

Dated 30*th December*, 1857.

3184. John Blake and Richard Dugdale Kay, Accrington—An improved apparatus for reducing and regulating the quantity, force, or pressure of steam.

3192. John Clinton, 35, Percy-street, Middlesex—Improvements in the manufacture of wind musical instruments played by the mouth, and in mandrils used in such manufacture.

Dated 4*th January*, 1858.

10. Thomas Scott, Drummond-street, Euston-square—Improvements in cleaning, separating, and mixing seeds, and in apparatus for those purposes.

11. Edmond Thomas Tillam, St. Mary's Hospital, Paddington—Improvements in apparatus for ventilating buildings.

12. Frederick Walton, Haughton Dale Mills, Manchester—Improvements in the manufacture of sheets or plates made of plastic compositions and other materials, and in the application thereof, either alone or in combination with other substances, to the manufacture of knife handles, mouldings, artificial veneers, floor-cloths, and other ornamental and useful purposes.

13. Edward Hamlin Kiddle, Broad-street, Lambeth—Improvements in smut machines.

Dated 5*th January*, 1858.

14. James Ellis and Joseph Henry Ellis, Leicester—Improvements in machinery for subdividing, or reducing into small particles, masses of rock and minerals.

15. John North Wilkins Twigg, Coventry, and William Adkins, Birmingham—Certain improvements in self-acting railway brakes.

16. James Leeming and John Carter Ramsden, Bradford—Improvements in looms for weaving.

18. George Edward Dering, Lockleys, Hertford—Improvements in electric telegraphs, and in the manufacture of insulated wire and cables.

Dated 6*th January*, 1858.

19. Thomas Fildes Cocker, Sheffield—Improvements in the manufacture of wire applicable to umbrellas and parasols, and to articles of dress.

20. Richard Archibald Brooman, 166, Fleet-street—An improved lock buckle. (A communication.)

21. Henry Constantine Jennings, 8, Great Tower-street—Improvements in the production and application of tannin or tannic acid.

22. James Drysdale Malcolm, 47, Leicester-square—Improvements in apparatus for ornamenting fabrics and other surfaces.

Dated 7*th January*, 1858.

23. Manuel Leopold Jonas Lavater, 23, Holywell-lane, Shoreditch—The application of the principle of exhausting air as used in plate holders, breast pumps for pegs.

25. Christophe Adrien Thiry, Paris—A new or improved oyster holder.

27. James Reilly, junr., Manchester—Improvements in chairs and seats of various descriptions.

29. Richard and John Philp, Norwood-house, Cheltenham—An improvement in propellors for propelling ships, boats, and other vessels in water.

30. Edwin Maw, Doncaster Iron Works, Cheshire—Improvements in the construction of metallic bedsteads and other surfaces to sit or recline on.

31. George Jean De Winton de Winton, Junior United Service Club, Charles-street, Saint James', Westminster—Improvements in copying apparatus. (A communication.)

Dated 8*th January*, 1858.

32. Samuel Lees, Salford—Improvements in the manufacture of mineral oil.

33. Henry Raymond, Bristol—Improvements in propelling ships or vessels.

34. Peter Soames and John Campbell Evans, Morden Iron Works, East Greenwich—Improvements in steam cranes, parts of which improvements are applicable to the generation of steam.

35. Richard Archibald Brooman, 166, Fleet-street—A method of and apparatus for teaching music and arithmetic. (A communication.)

36. Henry Atkins, Nottingham—Producing scarfs, neck-ties, and other articles from the warp machine.

37. Thomas Greenwood and John Batley, Leeds—Improvements in machinery for heckling flax and other fibrous materials.

Dated 9*th January*, 1858.

38. Robert Brown, Liverpool—Improvements in water-closets, parts of which are applicable to pumps.

39. William Church, Birmingham—Improvements in measuring rules, compasses, and in the machinery to be employed in manufacturing measuring rules and other mathematical instruments.

40. Thomas Rowell, Sunderland—Improvements in furnaces.

41. William Parsons and James Attree, Brighton—An improvement in the measuring of water and other liquids, and an improved water and liquid meter.

42. Jules Alphonse Mathieu Chaufour, Paris—Certain improvements in the construction of axle-boxes and axle bearings.

Dated 11*th January*, 1858.

44. Thomas Knowles, Hollingrove, Bury, and William Ogilvie, Manchester—Improvements in looms.

46. William Hartree, Lewisham-road—Improvements in furnaces or fire-places.

Dated 12*th January*, 1858.

48. André François Emile Robert, Paris—Improvements in the manufacture of curtains and hangings for walls and other places.

Dated 13*th January*, 1858.

50. George C. Greenwell, Radstock, near Bath—An improved pigment.

52. George Walker Muir, Manchester—Improvements in warming and ventilating.

54. Edward Brailsford Bright, Liverpool—Improvements in communicating signals by electricity, and in the apparatuses employed therein.

56. William Parsons, Pratt-street, Old Lambeth—Improvements in apparatus for supplying water to, and for preventing explosions of steam boilers.

58. Jean Baptiste Amédée Couder, Paris—Improvements in shawls.

INVENTION WITH COMPLETE SPECIFICATION FILED.

70. Marc Antoine François Mennons, 4, South-street, Finsbury—Certain improvements in gas retorts. (A communication.) 16th January, 1858.

WEEKLY LIST OF PATENTS SEALED.

January 22*nd*.

1744. Christopher Dicran Seropyan.
2022. William Deakin and William Phillips.
2024. Charles Fréderic Vasserot.
2026. Edward Wilson.
2028. Joseph Needham.
2033. John Scott Collins.
2040. Rd. Archibald Brooman.
2050. Wm. Stettinius Clark.
2094. Guillaume Félix Aroux.
2154. Wm. Alexander Clarke.
2164. John Parkinson.
2394. Thomas Robson.
2432. Henry Bessemer.
2576. William Mac Naught and William Mac Naught.
2652. Lucien Arbel.
2808. Henry Bessemer.
2832. Alexander Parkes.
2840. Alexander Parkes.
2890. Emile Alcan.
2898. Charles Wye Williams.
2930. Walter McFarlane.

January 26*th*.

2038. William Blake Richardson.

2045. Benjamin Richardson.
2051. Edwin Hallen.
2058. Edward William Baxter.
2060. Pierre Alexis Francisse Bobœuf.
2063. John Bethell.
2069. William George Plunkett.
2076. Thomas Ivory.
2079. James Alfred Limbert.
2091. William Jewett Harris.
2096. Edwin Maw.
2113. William Colborne Cambridge.
2116. Sebastien Botturi.
2117. Sebastien Botturi.
2121. Sebastien Botturi.
2178. Hubert Pirotte.
2224. John Dauglish.
2260. Alfred Vincent Newton.
2269. Alfred Vincent Newton.
2843. Henry Critchett Bartlett.
2882. George Tomlinson Bousfield.
2901. Henry Davis Pochin and James Woolley.
3023. Frederick Oldfield Ward.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

January 18*th*.

170. William Kilgour.

January 19*th*.

187. Barnett Samuel.

January 21*st*.

182. John Livesey.

January 22*nd*.

181. Charles William Tupper.
196. John Lamacraft.
227. David Moline.

January 23*rd*.

173. Frederic Prince.
200. Joseph Leese.

WEEKLY LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No. in the Register.	Date of Registration.	Title.	Proprietors' Name.	Address.
4044	Jan. 16.	Improved Link or Fastener for Shirts, Gloves, and other articles of Wearing Apparel	Edwin Page	Birmingham.
4045	" 21.	The Princess Royal Envelope for Needles.	W. Bartleet and Sons	Redditch.
4046	" 22.	A Rule, Pencil, and Pen-holder Combined	George Frederick Morrell	149, Fleet-street.
4047	" 23.	A Casement Stay	Wm. Tonks and Son	Birmingham.